Agency and argument realization in early child Inuktitut

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Abstract

Argument realization, and particularly argument omission, is a subject that has been widely studied in the field of child language research, and several different theories have been put forth to explain this phenomenon. In this study, semantic agency is proposed as a contributing factor. To test this, corpus data of four children acquiring Inuktitut were coded for agency on the grammatical subjects produced by the children. Statistical analyses were performed to assess the relationship between subject argument form and agency. A qualitative analysis of the verb semantics associated with non-agent subjects was also performed. While the analyses yielded some statistically significant results, no clear relationship between these factors could be identified. The qualitative analysis, on the other hand, did appear to reveal a weak trend in terms of a relationship between verb semantics and argument realization. The findings are discussed in terms of the broader aspects of the development of agency, transitivity, and ergativity.

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Introduction and background

A characteristic feature of children's early language is that they omit information that is otherwise required by the adult language. A two-year-old may, for example, say 'I put there', failing to produce the object of the verb 'put'. Argument omission, a phenomenon in which children omit subjects and objects of the verb, is well-documented across a variety of languages, and a much studied phenomenon in child language research. Even in pro-drop languages (e.g. Spanish), that allow for the omission of subjects in certain contexts, child learners omit arguments more frequently than adults (Grinstead, 2000). A number of different theories have been advanced to attempt to account for this phenomenon, explaining it in terms of both the linguistic competence and performance of children as well as in terms of extralinguistic pragmatic factors. A small number of recent studies have also suggested that verb semantics can be considered a significant factor in terms of argument omission. There has, however, been a relative shortage of such studies, and I argue that verb semantics is a factor that should be taken into account as

an explanatory force. The issue of argument realization (where the omission of arguments is but one of several different features) is a highly complex one that is likely to be rife with interactions between various areas of language, as well as other factors outside of the specifically linguistic arena. In this study I focus on the area of semantics that concerns itself with the thematic roles distributed to the participants involved in events; more specifically, the role of agency, and how non-agent subjects are expressed in child language, especially looking at it from the point of view of argument realization and perspective-taking. Previous research has found that children make use of the ability to linguistically mark shifts in their conceptual perspective by manipulating the way they realize subjects. In this study, I propose that children treat non-agent subjects distinctly from agentive subjects when it comes to argument omission, with the latter type being more likely to be omitted due to discourse-pragmatic and semantic factors. I investigate this in an experiment making use of longitudinal corpus data collected from a set of children acquiring Inuktitut.

In what follows I first review the relevant literature, before summarizing the findings and constructing a research question and hypothesis in light of what has been reviewed.

1.1 Literature review

In this section I first perform a review of the literature of argument realization. I then look at the research that has been carried out on the issue of semantic agency in development, and how this has been linked to both the acquisition of abstract

linguistic constructions and the notion of conceptual perspective.

1.1.1 Theories of argument realization

The research performed on the topic of argument omission can be divided into three major categories of explanation. The syntactic account holds that children's grammar differs from that of adults, in that their syntactic structures and parameters are still immature (e.g. Hyams, 1986), causing them to omit arguments in their utterances. As children develop, their grammar matures, and it eventually ends up resembling that of adult speakers of the language they are acquiring. While this account explains children's argument omission in terms of competence, the two other accounts focus on children's linguistic performance and the limitations on this early in development. The performance account claims that children have processing limitations that cause them difficulty in sentence production and lead them to omit arguments, and particularly transitive subjects (e.g. Bloom, 1990; Valian, 1991). While they may be aware that a sentence requires an explicitly expressed argument, the relative load on their cognitive system is supposed to lead to processing difficulties and as a result of this, higher rates of argument omission. The discourse-pragmatic account does not concern itself with explaining why children omit arguments per se, but attributes children's behaviour to extralinguistic information in the discourse, such as whether or not a referent is understood by the listener, the relative newness of the referents, and other such pragmatic factors (e.g. Allen, 2000).

However, recent research has shown that socio-cognitive factors like joint at-

tention play an important role in argument realization as well (Skarabela, 2007a, 2007b). Joint attention is defined as a social activity in which the child and the interlocutor are both focusing on the same referent while, crucially, being aware of each other's attention (Tomasello, 1999). Children start to engage in joint attention between 9 and 12 months of age as they begin to understand that other persons are intentional beings with goals that can differ from their own (Tomasello, 1999, 2003). This knowledge enables children to gauge others' knowledge states in discourse. Previous research indicates that their linguistic production reflects this, with a study showing that children acquiring Inuktitut used more omitted arguments and demonstratives (which, like omitted arguments, have referents that are only recoverable from the context of the social interaction in which the utterance took place) in the presence of joint attention, and more lexical nouns in the absence of joint attention (Skarabela, 2007b). These findings suggest that part of the argument omission that takes place during language development can be explained by children's early understanding and awareness of others' mental states, in such a way that they are able to determine whether the referent is accessible to the listener judged by their participation in joint attention, and select different argument forms based on this.

There have also been some studies looking at argument realization in the context of verb semantics. In a study on argument realization in the Tzeltal language, for instance, P. Brown (2008) found that children were more likely to omit arguments with semantically specific verbs as compared to with general, light verbs. These specific verbs have certain object properties encoded in them, effectively

narrowing down the number of referents it can be used with, whereas the light verbs entail a larger search space for possible referents. Referent recoverability for the child, then, would be possible not only from the context in which the utterance takes place, but also from the verb semantics of semantically specific verbs. P. Brown (2008) argues that overt argument realization (in both child and adult speech) is pre-empted in Tzeltal due to the specificity of the verb. These results obviously reflect the typology of the language, which suggests that children's argument omission might in part be a result of language-specific factors, but they nevertheless show that verb semantics can be part of an explanation concerning the question of why children omit arguments and when they do it. A related phenomenon has been described for English in Goldberg (2005), who points out that it is possible to omit the patient argument in grammatical adult English when the described action is particularly emphasized (e.g. in the case of a repeated action, *Pat gave and gave but Chris just took and took*) and the argument has a low discourse prominence.

Verb semantics, however, have not been systematically investigated as a force when it comes to argument realization to the degree of other explanations. This is somewhat puzzling, as semantic factors would seem to have the potential to be a fruitful area of study in connection with argument realization, as they have been shown to be important in other aspects of children's language acquisition. For instance, Tomasello (1992), in his diary study, found that his English-speaking daughter learned verbs for dynamic events (change of state or activity verbs) earlier than verbs describing static states. This could suggest that these former verbs and

the events they encode could be more salient in the discourse context, and more easily acquired by children (see also Pinker, 1984).

1.1.2 Agency and linguistic constructions

We saw above that the verb semantics of Tzeltal played part in argument realization in that language, in the sense that there was a higher rate of argument omission for verbs with a semantically specific meaning. Another issue within verb semantics concerns the verb argument structure, and specifically the aspect of the semantics of the arguments themselves. Namely, do the semantics of the thematic role[1] the argument takes affect the likelihood of it being omitted? Possibly the most interesting semantic role to consider is that of agency. The agent role is typically expressed as the subject of a transitive verb, and is thus an important concept as children start combining words, and during the acquisition of abstract constructions like the transitive construction. However, children learn how to manipulate the way they express the structure of an event by using different linguistic constructions. These constructions in turn vary in how they describe the participants in an event, thus offering the child a way to take different perspectives in their discourse. In the following we will first review research pertaining to the acquisition of linguistic constructions and the marking of agency. We will then consider the case of non-agent subjects and see the ways that children have been found to use these to mark changes in perspective-taking in the discourse.

The notion of agency in child language has been extensively studied and found

[1]When talking about thematic roles in this study, we take a general semantic approach not associated with any particular generative theory regarding the assignment of theta roles.

to play an important role during language acquisition. For instance, children have been found to link the notion of grammatical subject with that of the semantic agent (Budwig, 1995).

There are three main proposals related to the issue of the acquisition of active clauses and the linguistic expression of agency in events. First, there is the view that the development of construction categories is a protracted phase during which children make use of non-adultlike categories. This idea is central to Tomasello's (1992, 2000) Verb Island Hypothesis. This proposal claims that children initially operate with little to no abstract semantic generalizations, but rather make use of lexical patterns specific to individual verbs. As long as children work within this item-specific framework, then, the implication is also that they do not have general semantic categories such as agent and patient, but instead verb-specific roles such as 'kisser', with the adultlike thematic roles only emerging later in development as the child is able to generalize from the individual verbs they operate with in the initial stages of development (Olguin & Tomasello, 1993). A similar argument was made by Lieven, Pine, and Baldwin (1997), who found that children's early multiword utterances were initially lexically-based, and not produced based on more general and abstract underlying concepts—for instance, they found that children would just as often use a non-prototypical two-argument verb construction as the proposed prototypical agent-patient verb construction, described in more detail below.

Second, it has been suggested that the way children talk about and conceptualize events early on in development is based on prototypical scenes. Perhaps the

strongest proponent for this view has been Slobin, working from a cross-linguistic approach, who termed it Basic Child Grammar (Slobin, 1985). With this view, Slobin suggested that children's concept of prototypical agency will initially be expressed by linguistically marking what he calls the manipulative activity scene, described as involving "the experiential gestalt of a basic causal event in which an agent carries out a physical and perceptible change of state in a patient by means of direct body contact or with an instrument under the agent's control" (Slobin, 1985, p. 1175). This scene is said to be expressed by children with linguistic forms that are used to mark transitivity; however, the scene differs from the grammatical notion of transitivity in that it is more narrowly defined. In other words, children underextend the way they mark transitivity to this prototypical scene. Because the children who do this acquire typologically quite distinct languages (both nominative-accusative and ergative languages), Slobin interprets this as the manipulative activity scene reflecting on a universal cognitive bias children have regarding this event structure and the notion of a prototypical agent.

An issue with this proposal is how children develop more abstract categories. This is necessary because in language, transitive verbs of course do not always line up with prototypical scenes such as the one described above, with an agent acting volitionally to effect a perceptible change of state. One suggestion proposed to explain this is Schlesinger's (1988) account, referred to as semantic assimilation, which shares some aspects with Tomasello's (1992) Verb Island Hypothesis outlined above. When it comes to the relation between subjects and predicates, Schlesinger suggested that children will initially use a narrow, prototypical cat-

egory of agent before gradually beginning to use non-agent subjects based on semantic assimilation. Schlesinger (1988) defined prototypical agency in this way:

> It is proposed that prototypical agents have three features that are especially relevant to [semantic assimilation]: the agent (a) is in *motion*; (b) is the *cause* of the action described by the verb and responsible for it; and (c) is in *control* of this action. Similarity in any one of these three features makes [semantic assimilation] possible. (p. 134)

A similar idea to Slobin's (1985) view of the manipulative activity scene is Pinker's (1989) concept of semantic bootstrapping in which children use linking rules to bring together certain semantic (e.g. agent of an action) and syntactic (e.g. the subject of an active sentence) categories, effectively bootstrapping their way into initial syntactic competance. In this framework, these categories are commonly assumed to be innate, as evidenced by the ways in which children are supposed to make use of these categories in their early speech.

A consequence of the research outlined above has been the proposed notion of an early agentivity bias, where children make use of a general notion of an agentive participant, treating the acting participant in both transitive and intransitive sentences in a similar fashion (see also R. Brown, 1973). However, some languages treat these (termed A and S role arguments; Dixon, 1979) differently, marking them with respectively the ergative and absolutive case. According to the above view, then, children acquiring such ergative-abolutive languages would be expected to overextend the ergative case marking to S role arguments as well.

This ties in with the third and final view, which is that children, instead of

using the item-specific or general cognitive approaches presented above, make use of the typological distinctions specific to their language that are offered to them in the input. This proposal is associated with Bowerman's (1985) challenge to the Basic Child Grammar account presented by Slobin (1985). While she agrees that children might be cognitively biased with respect to something like the manipulative activity scene involving prototypical agency, Bowerman argues for the importance of looking at how children who aquire typologically different languages treat S role arguments. In reviewing studies on this, she notes that children exhibit a sensitivity to the distinctions of the language they are acquiring early in their development, such that those acquiring nominative-accusative languages (such as English) treated intransitive subjects like transitive (agent) subjects, whereas the ones acquiring ergative languages (like Inuktitut) treat them as objects, and thus not as an overextended category of agentive transitive subjects.

1.1.3 Non-agent subjects and perspective-taking

In adult language, people regularly take different perspectives on events and entitites, and mark these shifts in perspective by linguistic means (Clark, 1997). Perhaps the most basic of these is the choice of different words describing the same referent based on which perspective they are taking; for instance, the lexical choice between referring to a dog as either *dog* or *animal* depends on the perspective the speaker takes, which in turn is dependent on the pragmatic factors in the discourse (e.g. if talking about animacy in general, the term *dog* could be unnecessarily specific). Speakers can also present the listener with multiple perspectives

on events by using verbs that encode different participants as agents and focusing on these (e.g. the lexical choice between reversible verbs like *buy* and *sell*, where the two participants in the event each are expressed in the agent role in one of the verbs). Clark (1997) shows that children as young as one year of age, from the very start of their linguistic production, are able to make use of different perspectives. This ability is also an important one when engaged in pretend play, as children quite often are. Somewhat more sophistically, it is also possible to mark shifts in perspective with linguistic constructions. A fundamental example of this is the distinction between active and passive voice, in which the agent and patient of an action change grammatical roles (with the agent sometimes even omitted in passive constructions). With this phenomenon in mind, let us move on to see how children make use of this ability in the course of their development, focusing on non-agent subjects.

While children's use of linguistic markings of agency, and particularly agentive subjects, is a topic that has been extensively studied and debated, less research has been done on non-agent subjects and their development in acquisition. A large amount of the research performed in this area has been carried out by Budwig and her colleagues. In particular, Budwig (1995), using a developmental-functional approach to child language, has been studying the development of agency by looking at the ways in which children express this over time and how this lines up with (semantic) meaning and (pragmatic) function. For instance, Deutch and Budwig (1983) observed that English-speaking children would talk about possessive relations in two different ways, depending on what perspective they were

taking. Namely, the children would use the pronominal form (e.g. 'My pencil') when requesting an object, while using a nominal form talking about an object from a constative perspective (e.g. 'Adam car'). This study was the precursor to Budwig's (2001) cross-linguistic investigation into whether children's use of personal pronouns in subject position in marking prototypical agency. Her results indicated that English-speaking children "contrastively made use of self reference forms to take distinct perspectives on their role in human action" (p. 67). In a similar vein, Budwig, Stein, and O'Brien (2001) examined whether children could take distinct perspectives using non-agent subjects in different constructions. It has previously been shown that children acquiring English will use two passive constructions, namely *get* and *be* passives, in constrasting ways, with both differing from the perspective taken when using an active construction (Budwig, 1990). *Get* passives were used to express adversity, focusing on the negative consequences the action had on the patient subject. *Be* passives, meanwhile, were used when the agent in the action was generic, irrelevant, or unknown, and the focus was on what was happening to the patient. Budwig et al. (2001) further studied the ways in which children used constructions with non-agent subjects to mark how they would take different perspectives on events. They found that most of the non-agent constructions used by the English-speaking children were made up of active intransitives and middle diathesis sentences (sentences in which the syntactically active subject is itself affected by the semantic meaning of the verb), with a minority used with passives or active transitive constructions. These two constructions were used with different pragmatic functions in the discourse. Whereas the

active intransitive constructions were mostly used by the children in an attempt to create a new play frame, the middle constructions would be used when the child was expressing that their goal-oriented action was encountering resistance from the environment (somewhat similarly to the use of the *get* passives mentioned above).

1.2 The research question

In this section I summarize the most pertinent findings from the literature reviewed above, and show how this presents us with an interesting research question if we connect the different strands of research.

As we have seen above, children's early speech is marked by the relatively high rate at which they omit arguments. There have been several different proposed explanations behind this phenomenon, and many studies have attempted to tease apart the factors that go into child argument realization. What seems most likely is that a whole host of varying factors play a role, and that no one single theory is sufficient to explain what is, ultimately, a complex linguistic feature even in the adult languages that licence it. While many possible causes have been looked into, as yet there has been a shortage of studies investigating the role of semantics in argument realization, and particularly the issue of the semantic features of the relevant arguments.

Further, as we have seen above, the notion of agency is one that has been explored in some detail during language development, and in particular the concept of an agentive 'doer' and the intricate interaction between this and the acquisition of grammatical transitivity. However, within the issue of argument realization this

has not been studied to sufficient depth. There has also been a relative overweight of studies on agent subjects, with non-agent subjects only recently having been considered as a venure of research. What the research that has gone into this shows, however, is that children are sensitive at an early age to differences in the lexical choice involved in the argument realization of prototypical semantic agency and deviations thereof, as well as in different linguistic constructions using non-agent subjects. They are able to make use of this sensitivity to mark shifts in what perspectives they take on events and entitites and express this to listeners by manipulating linguistic features.

What I propose to do in this study, then, is to perform an examination on the argument realization in children from the semantic feature of agency. More specifically, I will focus on how non-agent subjects are expressed in Inuktitut. There are two main assumptions I will base my hypothesis on. First is the assumption that children to some degree will realize subject arguments differently depending on whether or not they are agentive as a way to mark shifts in perspectives. This assumption is made on the basis of Budwig's (2001) study showing that children are able to express contrasting perspectives on agency by producing a range of different subjects. Second, I assume that the role of agent makes a referent more likely to be omitted. Agents are almost invariably animate entities, and animacy is a discourse-pragmatic feature that has been proposed to account for argument omission in children. There is, however, conflicting evidence regarding whether or not this is actually a feature that plays a role in this. Some studies, e.g. Clancy (2003), have found that it does, but other studies have not found evidence that

this is so (e.g. Allen, 2000). On the other hand, while all agents are animate, the reverse is not the case; there are a lot of animate non-agent arguments. I will therefore assume that agents, in addition to their animacy, are particularly salient in the discourse by virtue of their agency. Recall that Skarabela (2007b) found that Inuktitut-speaking children were sensitive to the accessibility status of referents in the discourse context and showed a tendency to omit arguments or use demonstratives when referring to referents that were highly accessible as judged by involvement in joint attention.

Based on these assumptions, then, I hypothesize that children will be more likely to omit or express with demonstratives agent subjects than non-agent ones, and conversely, that non-agent subjects will tend to be expressed with lexical nouns. This is suggested to be due to agent subjects having certain inherent features that make them more likely to be easily retrieved from the discourse context, thus lessening the need to express it overtly by means of a lexical noun.

Should this be the case, it would firstly provide further evidence to show that children are sensitive to semantic factors—in this case, the notion of the thematic role of agency—at an early age. The acquisition of linguistic agency has been a much debated issue within child language development, but its potential role when it comes to the phenomenon of argument realization has yet to be explored. Second, it would suggest that the semantic notion of agency could be considered a conceptual accessibility feature, thus having the ability to help explain to a certain degree in what situations children omit arguments. While the notion of animacy has been suggested as an accessibility feature along this line, the concept of agency

is a narrower one (and also makes up a subset of possible animate referents; this will be further discussed in Chapter 2), so it might serve to make any results yielded by analyzing for animacy clearer and more focused.

In the rest of this study I will detail the methods used to investigate this (Chapter 2), describe the results of the experiments that were conducted (Chapter 3), before discussing the results in the context of argument realization and verb semantics (Chapter 4). Finally, I will summarize the findings of the study and suggest future paths of research, placing the results in a broader perspective of the research on language acquisition in children (Chapter 5).

2

Methodology

In order to explore the hypothesis outlined above, I used previously collected longitudinal spontaneous speech data from four children (2;0–3;6) acquiring Inuktitut, analyzing primarily their choice of third person argument form in non-agent subjects. I first briefly discuss the relevant details about the Inuktitut language, before describing the data and the coding procedure that was carried out.

2.1 Structural properties of Inuktitut

Inuktitut is a language in the Eskimo-Aleut language family, and is polysynthetic and morphologically ergative. The basic word order is SOV, but the language exhibits frequent argument omission, thought to be syntactically licenced by its rich inflectional morphology with both nominal and verbal affixes marking for case and agreement. Similarly to Skarabela (2007b), I focused on third person arguments. This is because overt first and second person arguments very rarely are

used in the language; as a result, the representation of these arguments is uniform across all cases (viz. omitted). Third person referents can be represented in three different ways in Inuktitut: omitted arguments, demonstratives, and lexical nouns. These are illustrated in examples 1–3[1]

(1) Null argument:

Ø apuuttu.
apuuq- juq
be.gone- PAR.3SG

'(She) is gone' (Elijah 2;0)

(2) Demonstrative:

Una katattu.
u- na katak- juq
DEM- ABS.SG fall- PAR.3SG

'This one dropped' (Louisa 3;6)

(3) Lexical noun:

Urviuja qailaurli.
urviujaq qai- lauq- li
spoon come- POL- IMP.3SG

'Give me the spoon' (Elijah 2;5)

The variable of argument form was shown by Skarabela (2007b) to be grouped in two with regards to argument realization; namely, omitted arguments and

[1]This study uses the following abbreviations: ABS, absolutive; COP, copula; CSV, causative; DEM, demonstrative; DIM, diminutive; EMPH, emphatic; IMP, imperative; INCP, inceptive; NOM, nominalizer; PAR, participative; POL, politeness affix; PRSP, prospective; SG, singular; 3, third person.

Name	Sex	Age	MLUv
Elijah	M	2;0–2;9	4.13–5.32
Lizzie	F	2;6–3;3	4.29–4.96
Louisa	F	2;10–3;6	3.28–4.37
Paul	M	2;6–3;3	3.89–4.50

Table 2.1: Children's profiles and grammatical complexity by verbal MLU (taken from Skarabela (2007b)

demonstratives constitute one group of context-dependent referents, while lexical nouns have an inherent meaning that does not rely on any specific contextual situation to recover the intended referent. In other words, despite being overtly realized in language production similarly to lexical nouns, demonstratives operate more like null arguments. The same two-pronged distinction is therefore adapted by the current study as well.

2.2 Data

The data in this study come from four children acquiring Inuktitut: Elijah, Lizzie, Louisa, and Paul[2] (Allen, 1996). The children were videotaped during naturalistic interactions with peers, siblings, relatives, and parents, and their utterences were transcribed by native speakers of Inuktitut in the CHAT format (MacWhinney & Snow, 1990; MacWhinney, 1991). The demographic and linguistic profiles of the children are outlined in Table 2.1.

In order to analyze the data, I used the CLAN program from the CHILDES project (MacWhinney & Snow, 1990). Out of all the arguments in the child

[2]Pseudonyms are used for the participants.

data, all grammatical subjects were identified. The same exclusion criteria as in Skarabela (2007b) were then used to generate a dataset of the relevant subjects. This resulted in 759 examples. A large proportion of these, however, were subjects of the incorporating copula verb -*u*- 'be', as in example 4. Since the general view is that copular 'be' does not assign thematic roles to its arguments (Haegeman & Guéron, 1999; Keenan, 1976), it was decided to exclude these instances as well.

(4) *Paisikuuma*
paisikuq- u- mmat
bicycle- COP- CSV.3SG
'It's a bicycle.' (Paul 2;6)

After excluding these, then, the final dataset consisted of 589 subjects. The data were analyzed by each individual child as in previous studies with the same data (e.g. Skarabela, 2007b) due to factors like individual variation between the participants.

2.3 Coding procedure

To code the transcribed data for agency, I used a definition of an agent as the instigator of the action described by the verb, displaying the features of animacy and volition, based on theoretical work with thematic roles (Fillmore, 1968; Jackendoff, 1972). One potential issue with this approach is the way it automatically treats any inanimate subject as non-agentive. Children talk a lot about what is in their immediate physical environment, which naturally will also include their toys, as did those in the current study. In particular there are two instances in the transcripts

where the children talk about their toys for an extended period of time—Louisa and Paul talking about dolls and cars respectively (though it did occur with the other children as well). While the subjects they used in these situations often were non-agentive (and would have been regardless of the referent), occasionally it was more ambiguous (when used with verbs that would otherwise take agent subjects). In some of these cases the child seemed to talk about the toy in such a way that would imply not viewing it as agentive, but in a more patient-like way; however, in other cases it was hard to determine from the transcript—these latter instances were coded as 'agency: unknown'. It was ultimately decided to treat references to toys based on a two-tiered system where dolls would be coded as agents given their relative similarity to animate beings, and cars (and other artifacts) as non-agents. Dodson and Tomasello (1998), in their study on the effects of animacy and pronouns in the acquisition of the transitive construction, found that children are sensitive to the animacy feature in referents, even in the case of what can be termed 'artificial animacy' as in the case of toys representing animate beings. It seems reasonable, then, to assess children's referring to these in a similar manner to other animate referents despite not being animate in the traditional sense. Both of examples 5 and 6 were thus coded as 'agency-present', despite the former referring to a doll. However, while toy cars and other non-animate toys can be said to have the thematic role of actor (see Foley & Van Valin, 1984), their inanimate nature excludes them from being agents. The number of cases where this turned out to be relevant was fairly limited, though, and is unlikely to have yielded very different results.

(5) *Unaapi sinittuapi.*

u-	na-	apik	sinik-	juq-	apik
DEM-	ABS.SG-	DIM	sleep-	NOM-	DIM

'This cute one is sleeping.' (Louisa 3;1)

(6) *Himmiapii hialittu.*

qimmiq-	apik	qia-	liq-	juq
dog-	DIM	cry-	NOM-	PAR.3SG

'The little doggy is crying.' (Louisa 3;1)

3

Results

In order to assess the role of semantic agency on the choice of subject form in child language, I analyzed the data from each individual child. The data set consisted of 589 examples of third person subjects, of which 445 were non-agentive. This ratio (75% non-agent subjects) is quite different from that described by Budwig et al. (2001), where agent subjects were used ten times more often than non-agent ones (in fact, well over half of all of the children's subjects were non-agentive, the lowest percentage being Elijah's 69%). The most likely explanation for this is the inclusion in this study of only third person arguments, suggesting that the children often referred to agents with first or second person arguments, describing the actions instigated by themselves or their interlocutors. The vast majority of subjects were also subjects of intransitive clauses or the subjectivized patient of a passive clause (relative to their English-speaking peers, children acquiring Inuktitut exhibit a precocious use of the passive construction, see Allen (1996)), with only a few being subjects of transitive clauses, or A role arguments; the

majority of these consist of first and second person arguments (Skarabela, 2007a). This would seem to fit with Slobin's (1985) manipulative activity scene, in which agentivity is the key feature marking transitivity. However, this is hard to tell without actually looking at the relevant transitive subjects to assess the rate of agency in these. Another possibility for this is raised in Skarabela (2007a), and is based on the idea of Preferred Argument Structure (Du Bois, 2003). This describes the findings from previous research on information structure which holds that there are certain restrictions on the ways in which speakers introduce new information into the discourse; that is, this information tends to be encoded in the S or O role arguments, with the A role argument reserved for given information (though this information is also distributed across the other two argument roles).

In the following I first report the results of the statistical analyses performed and briefly comment on them in terms of the initial hypothesis. I then look closer at the data; specifically, at the verb semantics that occur with the different argument forms.

3.1 Subject forms and agency

To test the hypothesis that children would tend to use more lexical arguments but fewer omitted arguments and demonstratives with non-agent subjects than with agent subjects, I performed a chi-square test of independence on the data of each individual child. The statistical design for this study used the form of the subject as the dependent variable, and the binary agency role was the independent variable. The results are presented in Table 3.1.

Name	Argument form	Agent	Non-agent	χ^2 (2)
Elijah	Omitted	59% (39/66)	51% (75/146)	
	Demonstratives	17% (11/66)	21% (31/146)	
	Lexical nouns	24% (16/66)	28% (40/146)	1.154, $p = .562$
Lizzie	Omitted	62% (21/34)	74% (68/92)	
	Demonstratives	21% (7/34)	16% (15/92)	
	Lexical nouns	17% (6/34)	10% (9/92)	2.069, $p = .355$
Louisa	Omitted	40% (9/23)	72% (76/105)	
	Demonstratives	30% (7/23)	23% (24/105)	
	Lexical nouns	30% (7/23)	5% (5/105)	16.853, $p<.001$
Paul	Omitted	76% (16/21)	74% (76/102)	
	Demonstratives	5% (1/21)	21% (21/102)	
	Lexical nouns	19% (4/21)	5% (5/102)	7.208, $p = .027$

Table 3.1: Subject arguments as function of agency in individual Inuit children

Contrary to the hypothesized results, all the children—with the exception of Elijah—use more lexical nouns for agent subjects than for non-agent ones. The same children also had a high rate of omitted non-agent subjects, with close to three quarters of these omitted. This is notable not only because it is a high rate of subject omissions, but also because this rate is higher or almost as high as the rate of omission for agent subjects. It is necessary to point out that these results are simply trends, though; in fact, only two of the children—Louisa and Paul—produced data that yielded differences in frequencies for subject argument form and agency that turned out to be statistically significant. If we compare their results to those of Elijah and Lizzie, we can see that they both use a very low number of lexical nouns with non-agent subjects (5% each), while Paul also uses a comparable number of demonstratives with agent subjects. Overall speaking,

the children omit a large number of their non-agent subjects; consequently rarely expressing them with lexical nouns. It is harder to discern a trend in the data with the agent subjects, other than there being a relatively high rate of omission in this group as well, with only between a fifth and a third of these subjects being expressed as lexical nouns. In sum, the data do not fit our hypothesis and it is somewhat unclear why, since two of the children presented data that turned out to be of no statistical significance whatsoever.

3.2 Animacy and non-agent subjects

While the agent subjects almost exclusively have human referents as discussed above, the non-agent subjects' referents are both animate and inanimate. Part of the reasoning behind the initial hypothesis was that since agent subjects would have certain discourse-pragmatic factors like animacy (in addition to referring to participants in events that are more salient in the discourse context) which some research has associated with argument omission, non-agent subjects, on the other hand, would be more likely to be realized overtly. However, the statistical analyses above did not produce the expected outcome. It might therefore be useful to break the non-agent subjects further down, and consider them by the binary feature of animacy. The role of animacy as a discourse-pragmatic feature involved in argument omission is somewhat unclear and controversial, as there are studies that have found that it does not play a significant role (Allen, 2000), while others have found that it does (e.g. Clancy, 2003). Nevertheless, if our assumption that agent subjects differ from non-agent subjects in their argument realization

Name	Argument form	Animate	Non-animate	χ^2 (2)
Elijah	Omitted	26% (5/19)	55% (70/127)	
	Demonstratives	37% (7/19)	19% (24/127)	
	Lexical nouns	37% (7/19)	26% (33/127)	5.887, $p = .052$
Lizzie	Omitted	59% (10/17)	77% (58/75)	
	Demonstratives	11% (2/17)	17% (13/75)	
	Lexical nouns	30% (5/17)	6% (4/75)	9.119, $p = .010$
Louisa	Omitted	70% (12/17)	72% (64/88)	
	Demonstratives	30% (5/17)	22% (19/88)	
	Lexical nouns	0% (0/17)	6% (5/88)	1.356, $p = .507$
Paul	Omitted	96% (24/25)	67% (52/77)	
	Demonstratives	4% (1/25)	26% (20/77)	
	Lexical nouns	0% (0/25)	7% (5/77)	8.102, $p = .017$

Table 3.2: Non-agent subjects as function of animacy in individual Inuit children

partly because of their having animate referents, we would expect the animate non-agent subjects to be expressed in a similar fashion (at least to a certain extent). To examine the relationship between animacy and argument form for non-agent subjects, these were divided into two groups based on whether or not they had the semantic feature of animacy. A total of 445 non-agent subjects were included in the analysis. Of these, a whole 367 (82%) were coded as non-animate. A chi-square test of independence was then conducted on the data of each individual child. The results of these statistical analyses are presented in Table 3.2.

As can be observed from the results, both Lizzie and Paul showed a statistically significant difference in the ways they produced non-subject argument forms for animate and non-animate referents, with Elijah's results being marginally significant. However, despite the significant relationships observed, no single trend

would seem to be possible to identify across children. The animate subjects also do not seem to have a particularly similar distribution to the agent subjects as we suggested could be the case. On the other hand, if we look at the non-animate subjects, they do for the most part look quite similar to the non-agent subjects in general. Of course, this should not be surprising, as the vast majority of non-agent subjects were also non-animate.

3.3 Verb semantics and argument forms

Given that the results did not match our hypothesized outcome, it might be interesting to consider the contexts in which children do use non-agent subjects, primarily examining which verbs they are used with across argument forms. While we only achieved statistically significant results for two of the children, taking a closer look at the data could perhaps reveal certain features that eluded the statistical analysis. For instance, it could be possible that the children omit arguments with certain types of verbs more often that with others. One possible hypothesis could be that there is a difference in the argument realization between static and dynamic verbs. As mentioned previously, this is a distinction that children show sensitivity to during verb acquisition (Tomasello, 1992). Dynamic verbs typically encode events that are salient in the physical environment, often describing changes of state that are easily discernible and tangible. Meanwhile, stative verbs encode events that are constant and unchangeable, often describing mental states that are not visible in the environment. On this basis, then, we can hypothesize that since the referents of dynamic verbs typically will be more accessible and salient in the

discourse context, arguments representing these will tend to be omitted—on the flip side, stative verbs will be more likely to have arguments that are expressed overtly with lexical nouns, as a way to ease the task of picking out the referent. Of course, it is important to point out that by their nature dynamic verbs will often have agentive subjects, encoding a prototypical transitive scene (cf. Slobin, 1985), and so, as we are looking specifically at non-agent subjects, this would make it seem likely that the verbs in question typically would be stative. However, it is the distribution of these types of verbs that is interesting to us; even if the dynamic verbs are rarely used with non-agent subjects, we want to examine whether there is a relationship between the argument form used and the semantic verb type. This examination will be purely qualitative, and not quantified with descriptive statistics or statistical analyses.

In order to assess this hypothesis, all the verbs used by each child with a non-agent subject were collected and sorted into groups based on which argument form the child realized the subject in (of course, in some cases a verb was used by the child with more than one type of argument, in which case it was recorded with all the argument forms it appeared with). A comprehensive collection of these verbs is listed in the Appendix [1].

Looking first at non-agent subjects expressed as lexical nouns, we see that there actually appears to be mostly dynamic verbs that appear with this argument form, as in example 7.

[1]Some of the verbs listed would ordinarily take an agent subject. In these cases, the verbs were used in the child data either as a passive construction (with a patient subject) or with an inanimate referent (e.g. a toy car).

(7) *Kuapa qamilittu!*
kuapa qamit- liq- juq
co-op extinguish- INCP- PAR.3SG
'The Co-op is shutting its lights off!' (Elijah 2;9)

Meanwhile, if we look at the verbs, the referents of which are expressed with omitted subjects, there seems to be a tendency for these to be used with stative verbs, particularly such ones that describe the properties or physical state of the referent, as is the case in example 8.

(8) *Ippialummat.*
ipiq- aluk- mmat
be.dirty- EMPH- CSV.3SG
'It's dirty.' (Lizzie 2;10)

Finally, the verbs used with demonstratives show similarities to the ones used with omitted arguments, with a good deal of overlap between these two categories. However, in this group there also appear a number of dynamic verbs, so it would appear that these arguments could be said to constitute a sort of middle ground between the (overtly expressed) lexical nouns and the omitted arguments (which are only accessible from the immediate context). That is not to say that there is a one-to-one relationship between verb semantics and argument form—that this is not the case is obvious from the data. There does appear to be a trend, though, that stative verbs mostly are expressed with omitted arguments and demonstratives, and the subjects of dynamic events, while being realized as all three argument forms, make up the majority of subjects realized as lexical nouns. It is also interesting to note that a number of the verbs appearing with lexical nouns were also often realized with either or both of the other argument forms at other periods

in the discourse. A possible explanation for this is that certain referents might initially be described with a lexical noun, and upon subsequent mentions be expressed with either of the other argument forms as a topicalized referent (and thus more accessible in the discourse-context).

In summary, then, the above results did not show a consistently statistically significant relationship between agency and argument form in child Inuktitut. The two children whose analyzed data did turn out to be significant showed opposite results to what our hypothesis predicted, using significantly fewer lexical nouns when talking about non-agent subjects than about agent subjects. Subsequently, the non-agent subjects were broken down into animate and non-animate groups. Statistical analyses revealed that the data for three of the children were at a statistically significant level. Even so, however, it was hard to draw any firm conclusions based on these findings, as the distribution of argument forms seemed to be somewhat idiosyncratic across the children. On the other hand, it should be pointed out that the small sample size used in the above experiments would lead to a relative lack of statistical power which could serve to obscure any possible relevant effects. We then looked more closely at what verbs were used with non-agent subjects, and how these subjects were realized, hypothesizing that the children would exhibit a difference in which argument forms they used for dynamic and stative verbs. Analyzing these results qualitatively, we found that there did seem to be such a difference; however, it was not the one we expected, but rather the complete opposite. These results are discussed in the context of our initial hypothesis and broader issues in the following chapter.

4

Discussion

In this section I discuss the results we got from the statistical analyses in terms of the initial hypothesis and the expected outcome. I then point out some of the shortcomings the current study turned out to have when it came to investigating this hypothesis, and suggest some ways in which the methods could have been improved. Other possible venues of research that were outside the scope of this project are considered, before the results are discussed and related to more general issues within the study of semantic agency and the acquisition of ergative-absolutive languages.

4.1 The role of agency in early subject realization

Children's early argument realization is a phenomenon that has been extensively studied in the field of language acquisition, across many structurally different languages. One of the main features observed in this cross-linguistic approach is the

fact that children during development omit more arguments in their speech than do adults, when acquiring languages that both do and do not licence argument omission in the adult target language (Hyams, 1986; Bloom, 1990; Valian, 1991; Allen, 2000; Grinstead, 2000). Several different theories have been raised in an attempt to account for these findings. Hyams (1986) proposed that they are a result of children's syntactic structures being immature and different from those of adults. Theories of performance limitations have also been suggested (e.g. Bloom, 1990), explaining them in terms of a processing bottleneck that affects children during production of their earliest word combinations. Finally, child language argument omission has been explained to occur as a factor of certain discourse-pragmatic properties characterizing the omitted referents, such as newness, physical presence, and so on (Allen, 2000).

However, so far there have been no studies examening the possible role played by the semantics of the omitted arguments. To this end, in this study I have investigated the relationship between agency and subject argument form in child Inuktitut—specifically, the hypothesis that non-agent subjects would tend to be expressed with lexical nouns to a higher degree than agent subjects. This hypothesis was based on the assumption that entitites representing agents in the event structures would be more accessible and salient in the discourse context and thus more likely to be omitted or expressed with demonstratives. This would further be affected by the fact that virtually all agent subjects represented animate entitites as well; animacy has in some studies been found to play a role in argument realization. Conversely, non-agent subjects make up a group consisting of both animate and

inanimate referents. This, then, in addition to their not having an agentive role in the event structure, caused us to hypothesize that they would tend to be expressed with lexical nouns more often than agent subjects.

However, the statistical analyses we performed to test this did not support the hypothesis. In fact, while the data for two of the children turned out to have no statistically significant differences between the argument realization of agent and non-agent subjects, the data for the other two children proved to be significant, although not in the way we hypothesized. Louisa and Paul actually referred to non-agent subjects with lexical nouns less often than with agent subjects, which was contrary to our hypothesis. Additionally, in expressing non-agent subjects, Louisa omitted a larger amount of these, while Paul produced a higher proportion of demonstratives.

A second analysis was then performed on the non-agent subjects to see if it would be possible to tease out any effects animacy might have. We tentatively posited that due to their both sharing the animacy feature, animate non-agent subjects would pattern in a somewhat similar fashion to agent subjects. This prediction was, however, not borne out. While the results from three of the children achieved significance, there could not be identified a trend it would be possible to generalize over.

There does not seem to be any obvious reason for why we achieved the results we did. In neither of the analyses did we observe any general trend that was valid for all the children. While certain of the children's data turned out to be statistically significant and thus yielding results that could lead us to reject the null

hypothesis, they did not do so in the way we expected. There are some possible reasons for this[1]. Firstly, the initial dataset was relatively limited (consisting of 589 exemplars), and was further reduced in the second set of analyses. The relative lack of statistical power and the degree of variability and noise in the sample could have contributed to the way the results turned out. Secondly, the results might be describing an actual effect in the dataset that we are simply not able to explain adequately. Finally, the experimental methods and approaches used could potentially be too crude or simply not suitable to capture an existing effect. For instance, while there are a number of reasons to be using longitudinal, naturalistic data (Allen, Skarabela, & Hughes, 2008), experimental approaches also have their advantages. It is possible that a well-designed experiment run in a controlled environment might have been better suited for this task by increasing the chances of children talking about certain semantical roles by utilizing semi-naturalistic play situations. Just how likely factors like these are to actually yield different results will remain a matter of speculation for the time being, though. Let us now consider some other approaches that could have been taken methodologically.

4.2 Aspects of thematic roles

The analysis performed in this study used a relatively coarse granularity when it came to the issue of semantics and thematic roles, operating only with the binary distinction of agency in the investigation. A more fine-grained analysis, classifying non-agent subjects in terms of their actual thematic role (as opposed to simply

[1]Which of course are not necessarily mutually exclusive.

as an absence of features associated with agency) might have offered us a more detailed understanding of the ways in which children used non-agent subjects. In particular, this could have helped us investigate in more depth how children shift between perspectives—it would seem reasonable that they might distinguish between different types of non-agent subjects by using different argument forms. For instance, there might be a difference between the way the semantic roles of 'theme' and 'actor' are expressed. If so, this could be a confound considering the way this study was structured.

Another approach that could have been taken would have been to look at different types of constructions to see if any relationships between construction type and perspective could be identified, as in Budwig et al. (2001). Inuktitut being a structurally quite distinct language from English it would have been interesting to examine possible similarities and differences in marking shifts in perspective by means of linguistic constructions. In particular, the ways in which children use the two forms of passive constructions provided in the language, as well as the situations in which they use verbal utterances as opposed to constructions involving noun incorporation (see Allen, 1996) could possibly yield insights specific to Inuktitut and the strategies children acquiring it rely on to express their perspectives on events by means of distinct verb argument structure constructions.

4.3 Verb semantics and non-agent subjects

As the statistical analyses of the relationship between agency and subject argument form only yielded significant results for the data of half the child participants,

and due to the results from these children being the opposite of the expected outcome, we looked more in detail on the way the children made use of non-agent subjects. Specifically, for each child we gathered all the verbs they had used with a non-agent subject and organized them after the argument form the subject had been produced with. Before undertaking a qualitative analysis of the data, we posited the hypothesis that there would be a certain relationship between the verb semantics and the argument form of the subject. Namely, we hypothesized that the subject referent of dynamic verbs would tend to be omitted or expressed with a demonstrative due to their salience and thus higher accessibility in the discourse context, while stative verbs would be more likely to be expressed overtly as lexical nouns because of the way the events they describe often are mental states or otherwise not tangible or perceptible in the physical context.

The results did turn out to show a certain trend, although not the one we were expecting. One group of stative verbs could be identified as describing properties of, or the states that their referents were in. The subjects of these verbs tended to be either omitted arguments or demonstratives. Conversely, the arguments produced as lexical nouns seemingly tended to be the subjects of verbs encoding dynamic events. It is important to note, of course, that this seems to be merely a trend, and a somewhat weak one at that; there is by no means a strong correlational interaction between verb semantics and non-agent subject argument form.

4.4 Conceptual perspective and non-agent subjects

A caveat to the above results is the issue that the way they were obtained was most likely not by the optimal way to conduct the analysis. One approach that could have yielded more easily analyzed results in terms of perspective-taking at least would have been to code the data for specific situations and discourse interactions in a similar fashion as Budwig et al. (2001). For instance, the situations in which the children were involved in pretend play could have been identified and assessed for the type of verb argument structure used. Related to this, another possible question would have been to examine the situations in which the incorporating verb *nnguaq*, 'play at', was used, and compare them with situations where the same root verb was produced but without the verb incorporation. Example 9 demonstratives how Lizzie used this incorporating verb in an utterence, talking about her doll.

(9) *Sininguasijuq.*

sinik-	nnguaq-	si-	juq-
sleep-	play.at-	PRSP-	PAR.3SG

'She is going to bed.' (Lizzie 2;10)

What the above suggests is that there are a number of other approaches to the question of how children mark shifts in perspective by linguistic means that could have provided us with better and more relevant information regarding this. Partly the reason for not taking such a course in this study was that this was not the principle issue it was aimed at examining (which was the possible relationship between argument realization of subjects and agency), and it was also considered as falling outside the scope of this investigation. However, the main point is that

some of these approaches could certainly lead to interesting results regarding the issue of conceptual perspective in children and the cross-linguistic differences in way they use language to mark this.

4.5 Ergativity and agency

Inuktitut is, as mentioned before, an ergative-absolutive language. This means that subjects of transitive verbs are treated distinctly (by receiving ergative case marking) from intransitive subjects and objects of transitive verbs (which are marked with the absolutive case), as opposed to nominative-accusative languages like English, which consider subjects of both transitive and intransitive sentences to make up a separate category (see Dixon, 1994). In the current study we did not take advantage of this fact, however, focusing instead on the topic of argument realization in general. In this section I will consider some of the wider issues posed by ergative languages and the acquisition of agency, before relating these to argument realization.

It would seem possible that this will have something to say for how children acquire agentivity, then—in one type of languages the semantic category of agent will be treated in a morphosyntactically uniform matter, while in another, agents of actions can be case marked in either of the two available ways depending on the argument structure of the verb. In fact, in some cases, an agent can be case marked in a similar way as a grammatical object. While not directly related to argument realization, examening what kind of case marking children produce on subjects of both transitive and intransitive sentences could possibly have yielded

some insights into the issue of acquiring agency, discussed above.

More related to the subject matter at hand in the current study, while the available research does not seem to support the idea of an early agentivity bias wherein children would be expected to overextend the ergative case marking (e.g. Fortescue & Olsen, 1992, for a discussion on West Greenlandic), other, more specific questions deserve consideration. While the early agentivity bias has been posed as a universal phenomenon, there is also the issue of how a mechanism based on semantic bootstrapping as proposed by Pinker (1984) would work with ergative-absolutive languages. However, Pinker (1984) also puts forth the suggestion that children might initially operate with a more fine-grained concept that is restricted to the notion of transitive agent and rely on this as they acquire early case marking. This, then, would also explain the reason why overextension errors regarding case marking has been observed in the speech of children acquiring ergative languages. Another explanation is suggested by Siegel (2000), who argues that ergative languages have linguistic cues to transitivity other than case marking. For Inuktitut, one of these cues is said to be verbal agreement affixes; because of the high degree of argument omission in even adult speech, it would also seem necessary for children to rely on other cues than the ones they observe from overtly realized arguments.

Semantic bootstrapping encounters a problem, however, when it is attempted to account for languages exhibiting split ergativity, such as Georgian or Hindi. Split ergative languages are so called as they make use of two case marking systems; in short, they sometimes behave as though they were ergative-absolutive,

and other times as though they were nominative-accusative languages (Van Valin, 1992). This split case marking relationship is conditioned by subtle semantic factors that even the relatively fine-grained notion of transitive agent would fail to pick up on. Some of the factors that can play a role are verb lexical semantics, tense and aspect, animacy, and argument form (Dixon, 1994; Van Valin, 1992). Siegel (2000) argues that if semantic bootstrapping is going to be able to account for children's acquisition of language with split ergativity, it needs to include sensitivity to semantic concepts that are even more subtle than (transitive) agent; for instance, the difference between true intransitives that describe events where only one participant takes part and sentences that might seem like intransitives on the surface (by structurally expressing only one argument) but which actually describe events involving an implied object that is not overtly realized.

In a similar vein, Narasimhan (2005) performed a longitudinal study on children acquiring Hindi, a split ergative language, in order to examine whether or not the children could be observed to overextend the ergative case, which marks only subjects belonging to the fine-grained category of agents of perfective transitive actions, because they might possibly operate with the relatively fine-grained notion of agent of transitive action. However, Narasimhan (2005) observed no case marking errors of this nature in her data. She argues that these findings provide evidence against an innate, prelinguistic bias towards the notion of agent, but rather supports an input-based theory where children acquire the concept of agency as necessitated in Hindi by virtue of their exposure to distributional patterns from the input, in line with the prominent line of relatively recent research emphasiz-

ing the role of the input language in acquisition (Bowerman, 1985; Lieven et al., 1997; Tomasello, 2003). Further to the issue of input, Narasimhan, Budwig, and Murty (2005) investigated the properties of child-directed speech in Hindi. Since Hindi, like Inuktitut is characterized by a high rate of argument omission, it was posited that children might be influenced by this and make subsequent errors in verb transitivity. This did not turn out to be the case, however. Despite the large amounts of argument omission presented to them in the input, the Hindi-speaking children performed at an equivalent level to children acquiring languages in which the argument structure of the verbs is usually expressed explicitly, suggesting an early sensitivity to other discourse-pragmatic factors. In a related fashion to this, Uziel-Karl and Budwig (2007) studied the development of non-agent subjects used with change of state verbs in Hebrew. The results of their two case studies suggest that the input the children received from their mothers, and especially in terms of specific subject–verb constructions, facilitated the acquisition of non-agent subjects, although this affected mainly the early use and order of development of these.

Input factors like the ones discussed above were not considered in the current study, but they do serve to illustrate the important role played by the input that children receive during development. With regards to the issues examined in this study, there are some questions that could be addressed in future studies. For instance, the way the adult caretakers use subject–verb constructions with non-agent subjects could be examined, to see if the frequency effects reported by Uziel-Karl and Budwig (2007) would be replicated, and gauge just how much of

an effect the input has on verb acquisition. Two other issues that could be investigated within this research question would be the verb semantics and whether or not the assumption we have been taking in this study holds; i.e. whether verbs with non-agent subjects encoding dynamic events are acquired more easily than stative verbs. The other issue would be concerning the relative role argument realization might play. As seen above, children exposed to languages like Hindi, with a complex split ergativity system for case marking, acquire verb transitivity structures and the case marking, which depends on subtle semantic factors involving agentivity, quite effortlessly and without making the overextension errors that might be expected if they had an agentivity bias towards (agentive) subjects of both transitive and intransitive clauses.

Finally, do children acquire the two different case markers of ergative-absolutive languages like Inuktitut in a similar fashion, or are there developmental differences? If there are, are these contingent strictly on the linguistic input, or are they acquired in tandem with the concept of agency and transitivity? In a similar vein, does children's early usage of case markers on (overtly expressed) arguments differ based on the type of argument; that is, both in form (demonstrative versus lexical noun) as well as in (semantic) meaning, such as the issue of agency. These are but some of the questions that could prove worthwhile to study in order to shed more light on developmental issues like item-based language acquisition, and the relationship between semantics and pragmatics.

5

Conclusion

In this study we have investigated the role of agency on argument realization in early child Inuktitut. There are several theories that concern themselves with explaining argument realization, and in particular the issue of argument omission that has been noted to be quite frequent in a wide variety of typologically different languages that both do and do not syntactically licence argument omission in the adult grammar.

One line of research into this issue has only recently developed, considering the relative role of (verb) semantics on when arguments are omitted. The current study contributes to this area by assessing the relationship between thematic roles and argument realization in four children acquiring Inuktitut; specifically, the semantic role of agency. We hypothesized that agent subjects would tend to be omitted more often than non-agent subjects by virtue of a combination of their semantic properties (agent of an action) and discourse-pragmatic factors (animacy).

However, our experiments did not yield the expected outcome. While the

two statistical analyses provided statistically significant results for some of the children, overall the results must be said to be mixed, with no discernible trends. Our qualitative examination of the different types of verbs with which non-agent subjects were produced seemingly exhibited a weak trend suggesting that with stative verbs describing properties of the referent, the subject tended to be a null argument, while the subjects that were expressed as full lexical nouns often were subjects of a dynamic verb.

These results would seem to suggest that the notion of agency is not a conceptual accessibility feature. In Chapter 4 we considered possible shortcomings with the experiments performed in this study, and discussed not only potential improvements and future research, but also the broader issues of the acquisition of the concepts of agency, transitivity, and ergativity.

Overall, agency did not appear to be a factor in children's early argument realization. However, it is clear that it is an important developmental concept, which seems to be closely tied into issues of semantic sensitivity, case marking, and verb argument structure.

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Appendix: Verbs used with non-agent subjects

Verb	Omitted	Demonstrative	Lexical noun
aanniq 'hurt'		+	+
nui 'appear'	+		+
sukak 'be tightened'			+
simik 'plug'			+
gi 'have as'	+		+
uut 'burn'	+		+
auvaq 'bleed'	+		+
ikit 'light'			+
suq 'do'			+
qamit 'extinguish'			+
tikit 'arrive'			+
uq 'arrive at'		+	
piiq 'remove'	+	+	+
katak 'fall'	+		+
sukkuq 'be broken'	+		+
qaq 'have'	+		+
aq 'go by way of'	+		+
aarqik 'repair'	+	+	
kumilaq 'be itchy'		+	
angi 'be big'	+	+	
miki 'be small'	+	+	
kiinnak 'sharpen'		+	
ipik 'be sharp'		+	
tupak 'wake up'		+	
aannia 'be sick'		+	
paa 'beat'	+	+	
kiliq 'cut'	+	+	

Table 1: Elijah

Verb	Omitted	Demonstrative	Lexical noun
taku ‘see’	+		
piu ‘be good’	+		
tuqu ‘die’	+		
mitiq ‘cover with’	+		
ukkui ‘open door’	+		
qai ‘come’	+		
surva ‘make noise’	+		
ili ‘put away’	+		
uvvaq ‘wash’	+		
asiu ‘lose’	+		
uunaq ‘be hot’	+		
piruq ‘grow’	+		
nipa ‘make a sound’	+		
atuq ‘use’	+		
puuq ‘put in bag’	+		
aula ‘move’	+		
kisaq ‘anchor’	+		
matu ‘cover’	+		
aniiq ‘be outside’	+		
nammaq ‘be sufficient’	+		
igit ‘throw away’	+		
alia ‘enjoy’	+		

Table 1: Elijah (cont.)

Verb	Omitted	Demonstrative	Lexical noun
aniiq 'be outside'	+		+
aangajaak 'be drunk'	+	+	+
aahaaq 'hurt'	+	+	+
tigu 'take'	+		+
tuqu 'die'		+	+
aarqik 'repair'	+	+	
apaapa 'eat'		+	
piiq 'remove'	+	+	
asiu 'lose'	+	+	
nuqqaq 'stop'		+	
qaq 'have'	+	+	
aq 'go by way of'	+		
angi 'be big'	+		
miki 'be small'	+		
uq 'arrive at'	+		
apuuq 'be gone'	+		
uummaq 'revive'	+		
kuvi 'pour'	+		
taqa 'be tired'	+		
nungut 'be finished'	+		
ikuma 'be lit'	+		
misuk 'plunge'	+		
iikkiiq 'be cold'	+		
atuq 'use'	+		
apaaq 'dress'	+		
katak 'fall'	+		
amaaq 'carry piggyback'	+		
itsiva 'sit'	+		
allaC 'write'	+		

Table 2: Lizzie

Verb	Omitted	Demonstrative	Lexical noun
uq 'arrive at'			+
aahaaq 'hurt'	+		+
ani 'go out'		+	+
angi 'be big'	+	+	
miki 'be small'	+	+	
mamaq 'taste good'	+	+	
nakkaq 'fall into water'		+	
kakkik 'blow nose'		+	
piu 'be good'		+	
katak 'fall'	+	+	
matu 'cover'	+		
aniiq 'be outside'	+		
iikkiiq 'be cold'	+		
aannia 'be sick'	+		
piiq 'remove'	+		
apuq 'bump into'	+		
itsiva 'sit'	+		
tammaq 'make mistake'	+		
aq 'go by way of'	+		
nungut 'be finished'	+		
qai 'come'	+		
aarqik 'repair'	+		
aup 'bleed'	+		
ukkuaq 'close door'	+		
asiu 'lose'	+		
niarquaq 'bump head'	+		
tuqu 'die'	+		

Table 3: Louisa

Verb	Omitted	Demonstrative	Lexical noun
sukkuq 'be broken'	+	+	+
piiq 'remove'	+	+	+
nungut 'be finished'		+	+
ijukkaq 'fall'	+		+
aqit 'be soft'	+	+	
napi 'break'		+	
situ 'slide'	+	+	
tittau 'be blown away'	+	+	
uunaq 'be hot'	+	+	
aju 'break free'		+	
uq 'arrive at'	+	+	
miki 'be small'		+	
angi 'be big'	+	+	
allaC 'write'	+	+	
annuraaq 'dress'	+		
score 'score'	+		
aq 'go by way of'	+		
tuqu 'die'	+		
taku 'see'	+		
apuq 'bump into'	+		
aanniq 'hurt'	+		
ajursit 'be stuck'	+		
taaq 'acquire'	+		
tappik 'have good vision'	+		
qiu 'be cold'	+		
majuq 'climb'	+		
nakat 'cut'	+		
nitja 'make noise'	+		
asitij 'replace'	+		
nipit 'stick'	+		
niarquaq 'bump head'	+		
qaq 'have'	+		
qimit 'strangle'	+		

Table 4: Paul